

## Improvement of Complex Treatment of Red Lichen Planus of the Oral Mucosa

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**Abstract:** Red lichen planus (RED FLAT LICHEN) is a chronic nodular disease that belongs to dermatoses and can manifest on the oral mucosa (oral mucosa) and skin [3,6,8,10,12,14]. In the literature, there is evidence of damage to both the oral mucosa and the red border of the lips. According to various authors, isolated lesions of the oral mucosa alone are observed in 35% to 70 % of cases [1, 5,7,11,15,16,17,22].

**Key words:** Ozone reacts, red flat lischai, Vermillion index, index indicators, blood components.

### 1. Introduction

Most often, the process develops in the retromolar region of the mucous membrane of the cheeks, tongue, red border of the lips, very rarely in the area of the bottom of the mouth, palate and gums. Women aged 50-60 years are more likely to get sick, and the disease can occur in men at a young age [2, 4,9,13,17].

There are a number of factors (sharp edges of teeth, uneven surfaces of fillings, crowns, dissimilar metals, irrationally manufactured dentures) that lead to the traumatization of the oral mucosa and contribute to the development of chronic inflammation of the oral mucosa, against which RED FLAT LISCHAI can develop [1, 4,6,8,11].

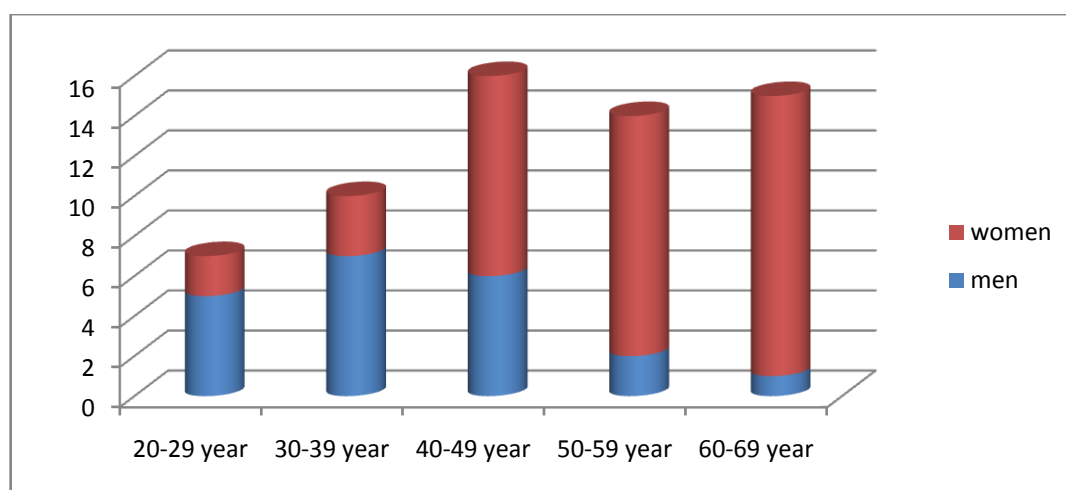
One of the methods of non - drug treatment used for the treatment of Red flat lischai, oral mucosa in dentistry is ozone therapy [10,13,18,20]. Ozone reacts with blood components and causes activation of oxygen metabolism, cellular energy, immunomodulatory changes, antioxidant defence systems, and microcirculation in tissues [19,21,23].

### 2. The aim of the study

To improve the treatment of an erosive and ulcerative form of lichen planus in complex treatment with ozonated sesame oil.

### 3. Research material and methods

We observed 62 patients with an erosive and ulcerative form of red lichen planus of the oral mucosa erosive ulcerative form, oral mucosa, red flat lischai who are on outpatient treatment in the clinic of therapeutic dentistry of the Tashkent state dental Institute. Of these, 21 were men (33.8%), 41 were women (66.1%), 5 were men (8.09%) and 2 were women (3.02%) aged 20-29; 7 were men (11.29%) and 3 were women (4.83%) aged 30-39; 6 were men (9.67%) and 10 were women (16.12%); at the age of 50-59 years-2 men (3.22%) and 12 women (19.35%); at the age of 60-69 years-1 man (1.61%) and 14 women (22.58%).



**Fig. 1. Gender-age study of patients with erosive ulcerative form, lichen planus**

All 62 patients were diagnosed with erosive ulcerative form, red lichen planus of the oral mucosa, patients were divided into two groups (the main group and the comparison group), randomized by gender and age, which ensures the representativeness of the data obtained. A clinical examination was performed in all patients, anamnesis of the disease was collected, an assessment of the hygienic state of the oral cavity was determined-OHI – S green-Vermillion index, PMA-papillary-marginal-alveolar index, the area of the lesion and the diameter of the erosive-ulcerative surface were measured with a compass and ruler.

All patients with erosive ulcerative form, lichen planus, and oral mucosa received local and General treatment.

Patients with erosive ulcerative colitis, lichen planus of the main group and the comparison group received a generally accepted General etiopathogenetic treatment consisting of corticosteroids, vitamins, anti-allergic drugs, retinol acetate.

In local treatment, the following are used: for local application anaesthesia - 2% lidocaine solution; for removal of fibrinous - necrotic plaque - application with an enzyme; antiseptic chlorhexidine, application of sesame oil.

However, in order to prevent the development of various toxic and allergic reactions to numerous medications, we decided to use a non-drug method of therapy in the main group, in the form of ozonated sesame oil, for local treatment. However, we did not use the antiseptic chlorhexidine due to the antimicrobial properties of ozone, which have a destructive effect on the cytoplasmic membranes of bacteria, fungi and viruses.

Ozone therapy is a non-drug method of treatment that is widely used in the world, promotes the regulation of disturbed homeostasis, activates the body's defences I. N. Chuprunova et al., (1998) found that with a local application of ozone in patients, epithelization accelerates 2-3 days earlier. To do this, we used the device "Ozonator clinical O3", developed in the scientific and production enterprise "Asia-R" of the Republic of Uzbekistan. it is characterized by ease of use, high efficiency, good tolerability, practical absence of side effects, and economic feasibility.

All patients were prescribed a full-fledged sparing diet, forbidden to eat spicy, salty, fried food, as well as foods rich in organic acids, fruits (strawberries, pineapple, cranberries, currants), vegetables (tomatoes) and alcoholic beverages.

During remission, the oral cavity was sanitized, foci of chronic infection were eliminated, and diseases of the gastrointestinal tract and ENT organs were treated. In the process of sanitizing the

oral cavity, dental deposits were removed with an ultrasound scanner, sharp edges of the teeth were polished, low-quality fillings and dentures were replaced, and the phenomena of galvanism due to the presence of dissimilar metals in the oral cavity were eliminated.

#### 4. Results and discussion

When examining the oral mucosa, the symmetrical location of the lesion elements was determined: erosive ulcerative form, red lichen planus-sharply painful erosions and ulcers covered with fibrinous plaque, surrounded by polygonal papules on the inflamed and hyperemic mucosa of the retromolar part of the cheeks, the side surface of the tongue and the red border of the lips. In patients of the main group (32) and the comparison group (30), there was a deterioration in the hygienic state of the oral cavity, which was manifested by a decrease in oral hygiene (OHI-S index).

Table 1.

**Dynamics of changes in index indicators  
by observation period (M±m)**

Term of treatment	Hygiene index (OHI-S)		RMA (%)	
	Main group n=32	Comparative group p n=30	Main group n=32	Comparative group n=30
Before treatment	2,46±0,22	2,89±0,24	41,32±2,05	38,21±0,05
3 day	2,44±0,11	2,51±0,23	22,66±2,13	32,42±2,18
7 day	2,24±0,26	2,33±0,24	22,21±1,71	24,52±0,42
30 day	1,03±0,25	1,73±0,05	14,69±2,66	17,33±1,44
90 day	0,63±0,25	0,92±0,22	10,27±2,13	11,62±2,66
180 day	0,40±0,27	0,61±0,25	7,15±2,64	9,17±2,17
Control n=18	0,78±0,21		5,28±2,11	

So, the initial data of the OHI-S index in patients with erosive ulcerative form, lichen planus of the main group was  $2.46 \pm 0.22$ ; in the comparison group  $2.89 \pm 0.24$ , in the control group  $0.78 \pm 0.21$  ( $P < 0.01$ ). In patients of the comparison group, the initial data of the PMA index in the main group and the comparison group were  $41.32 \pm 2.05\%$  and  $38.21 \pm 0.05\%$ , respectively, and in the control group  $5.28 \pm 2.11\%$  ( $P < 0.01$ ). Before treatment, patients in the main group have erosive ulcerative form, lichen planus, oral mucosa, patients note severe pain when eating and talking, hyperemia and edema of the mucous membrane are noted. The initial parameters of the diameter of the erosive-ulcerative focus were  $1.5 \pm 0.06$  cm, the area of the lesion  $15.4 \pm 2.4$  mm<sup>2</sup>.

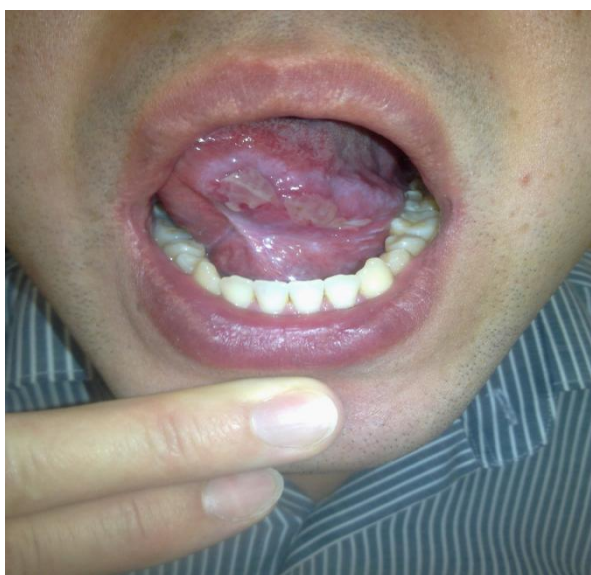
3 days after the start of treatment, the OHI-S and PMA index values in the main and comparison groups show a decrease in the OHI-S and PMA indices by 1.28 and 1.8 in the main group, and 1.08 and 1.1 in the comparison group, respectively ( $p < 0.001$ ). The diameter of erosive-ulcerative foci was  $0.88 \pm 0.1$  cm, a decrease of 1.70 times, the area of the lesion was  $13.6 \pm 1.7$  mm<sup>2</sup>, a decrease of 1.13 times in relation to the indicators before treatment ( $p < 0.001$ ).

After 7 days from the start of treatment with ozone therapy, patients in the main group had moderate pain when talking, but eating was not difficult. The objective examination also revealed no significant changes, oedema and hyperemia of the oral mucosa in the affected areas remained. On average, the diameter of erosive and ulcerative lesions was  $0.76 \pm 0.01$  cm, compared with the same indicator before treatment, which indicates a statistically significant difference in values

( $p < 0.05$ ). The lesion area was  $-12.4 \pm 2.2 \text{ mm}^2$ . Thus, there is a decrease in the diameter of the ulcer lesion and the area of the lesion by 1.97 times and 1.24 times, respectively ( $p < 0.05$ ).

In the comparison group, 7 days after the start of traditional treatment, patients complained of pain, burning, slight itching, and discomfort when talking and eating. On objective examination, hyperemia and oedema of the oral mucosa persisted. In some places, erosive and ulcerative areas of the oral mucosa had an irregular shape and polygonal outlines and were covered with a fibrinous coating. The index of the diameter of the erosive-ulcerative surface was  $0.84 \pm 0.05 \text{ cm}$ , the area of the lesion was  $13.78 \pm 1.8 \text{ mm}^2$ , the decrease in comparison with the indicators before treatment is 1.90 times and 1.13 times, respectively ( $p < 0.05$ ).

The hygiene index decreased slightly compared to the indicators before treatment and corresponded to 28,67% ( $2,24 \pm 0,26$ ) -25,08% ( $2,33 \pm 0,24$ ), this shows a decrease of 1.4 times and 1.3 times, respectively, compared to the indicators before treatment ( $p < 0.001$ ). The PMA index in the main group and the comparison group on day 7 of treatment were 46.25% ( $22.21 \pm 1.7$ ) and 35.83% ( $24.52 \pm 0.4$ ), respectively, which shows a decrease in the inflammatory process by 1.86 times and 1.55 times, respectively, compared to the indicators before treatment ( $p < 0.001$ ).

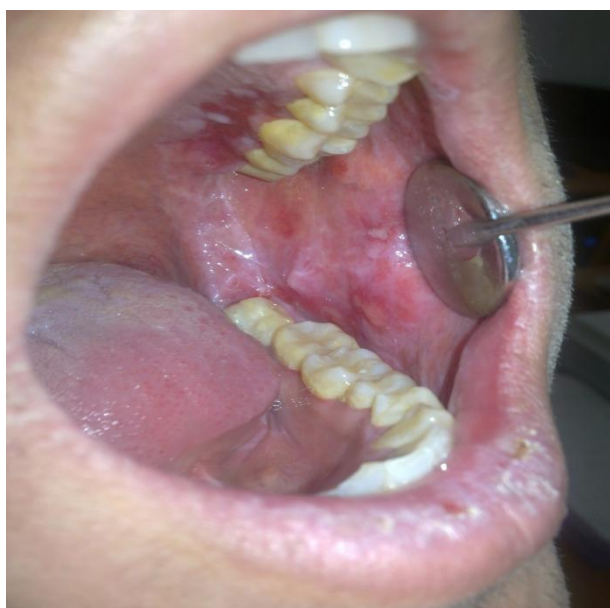


**Picture. 2 patients. 34 years old ulcerative form Red lichen planus before treatment**



**Picture. 3 patients. 34 years old Lichen planus after ozone therapy**

Long-term results of treatment show that after 180 days from the start of ozone therapy, all patients in the main group did not complain. Objectively, the oral mucosa is clinically determined to be pale pink in colour, with typical popular elements at the site of healed foci of erosion. The diameter of the lesion was  $0.21 \pm 0.06 \text{ cm}$ , the area of the lesion was  $1.5 \pm 2.2 \text{ mm}^2$ , a decrease of 4.14 times and 10.26 times, respectively, compared to the indicators before treatment ( $p < 0.05$ ).



**Picture. 4 patients. 34 years old erosive and ulcerative form Red lichen planus before treatment**



**Picture. 5 patients. 34 years old erosive and ulcerative form Red lichen planus after ozone therapy**

In the comparison group, 6 months after traditional treatment, all patients complained of minor soreness of the oral mucosa, especially when brushing their teeth. An objective examination of the oral cavity shows a mucous membrane with small foci of erosion, covered with fibrinous plaque. The diameter of the erosive focus was  $0.35 \pm 0.04$  cm, the area of the lesion was  $2.9 \pm 2.3$  mm<sup>2</sup>, compared with the indicators before treatment, the decrease was 4.57 times and 5.37 times, respectively ( $p < 0.005$ ).

Should be noted that when using ozonated sesame oil in the complex treatment of patients with erosive ulcerative form, lichen planus, oral mucosa, there is a high anti-inflammatory effect, which consists in the regression of inflammatory phenomena and reducing the risk of possible complications.

Thus, in the main group of patients with erosive ulcerative form, lichen planus when using ozone therapy, the duration of remission increased and reached a value of  $5.75 \pm 0.06$  months in 96.87% of cases (31 people), before treatment it was  $2.53 \pm 0.6$  months. In the comparison group, the duration of remission before treatment was  $2.49 \pm 0.7$  months, after treatment, this indicator increased to  $3.34 \pm 1.3$  months in 86.66% of cases (26 people), an increase of 1.34 times ( $p < 0.005$ ).

Consequently, ozone therapy provides a significant economic effect without the use of antiseptic drugs due to a significant reduction in treatment time, prolongation of remission by 2.27 times ( $p < 0.005$ ).

The effectiveness of treatment was evaluated by the duration of remission before ozone therapy. So, in the main group, it was  $2.53 \pm 0.6$  months, after ozone therapy, this indicator increased 2.27 times ( $p < 0.005$ ) - and reached a value of  $5.75 \pm 0.06$  months in 96.88% of cases (31 people). It should be noted that the erosive ulcerative form, Lichen planus after 9 months transformed into a typical form in 1 patient (3.12%) Fig. 4).

Thus, after 9 months from the beginning of treatment in 1 patient (3.12%), Erosive ulcerative form, Lichen planus transformed into a typical form, this once again confirms the positive dynamics of the treatment of patients with ozonated sesame oil. Erosive and ulcerative lesions were completely epithelized, and only an openwork pattern of papules remained on the mucous membrane at the site of healing.

In the comparison group, 6 months after traditional treatment, all patients complained of minor soreness of the oral mucosa, especially when brushing their teeth. An objective examination of the oral cavity shows a mucous membrane with small foci of erosion, covered with fibrinous plaque. The diameter of the erosive focus was  $0.35 \pm 0.04$  cm, the area of the lesion was  $2.9 \pm 2.3$  mm<sup>2</sup>, compared with the indicators before treatment, the decrease was 4.57 times and 5.37 times, respectively ( $p < 0.005$ ).

We evaluated the effectiveness of therapy in patients of the comparison group based on the achieved remission periods. The duration of remission in the comparison group before treatment was  $2.49 \pm 0.7$  months, after treatment, this indicator increased by 1.34 times ( $p < 0.005$ ), reached up to  $3.34 \pm 1.3$  months in 86.66% of cases (26 people).

In addition, in 3 (9.98%) patients after 9 months, the erosive ulcerative form, Lichen planus passed into the typical form, which confirms the positive dynamics of the treatment of patients with sesame oil. In 1 patient of the comparison group (3.33%)-there was a tendency to a long course of the erosive and ulcerative process. After epithelization in 29 patients (96.59%), single tender scars surrounded by popular elements forming a Wickham grid remained on erosive-ulcerative foci of the mucous membrane (Fig.5).

It should be noted that the index of caries, filling, removal in patients with erosive ulcerative form, Red lichen planus of the main group was  $18.21 \pm 0.72$ ; in the comparison group,  $18.32 \pm 0.32$  was registered against  $8.18 \pm 0.22$  ( $P < 0.05$ ) in the control (Table 4).

**Table 4.**

Determination of the degree of INTENSITY of dental CARIES PATIENTS with Erosive ulcerative form LICHEN, the mucous membrane of the oral cavity

№	Indexes	The control group	The comparison group	The main group
		n=18	n=30	n=32
1	Caries, filling, removal	$8,18 \pm 0,22$	$18,32 \pm 0,32$	$18,21 \pm 0,72$
2	Caries	$6,14 \pm 0,21$	$11,72 \pm 0,24$	$12,61 \pm 0,48$
3	Filling	$2,04 \pm 0,21$	$4,68 \pm 0,18$	$3,58 \pm 0,13$
4	Removal	$2,14 \pm 0,38$	$3,18 \pm 0,21$	$3,03 \pm 0,28$
5	Caries, filling, removal (6 month)	$5,0 \pm 0,5$	$12,5 \pm 0,6$	$13,24 \pm 0,72$

Caries, filling, removal of patients with erosive ulcerative form, Lichen planus, oral mucosa in the control group, the intensity of caries according to the WORLD HEALTH ORGANIZATION is average, in the main group and the comparison group – high.

In the structure of caries, filling, removal of patients of the main group erosive ulcerative form, Lichen planus, oral mucosa element "K" ( $12.61 \pm 0.48$ ); in the comparison group – ( $11.72 \pm 0.24$ ) prevailed over the indicators of "K" in the control group ( $6.14 \pm 0.21$ ). The index "P" was almost equal, both in patients of the main group and the comparison group erosive ulcerative form, Lichen planus, oral mucosa and control, respectively, was  $3.58 \pm 0.13$ ;  $4.68 \pm 0.18$  and  $2.04 \pm 0.21$  ( $P < 0.05$ ). The indicator "Y" removed teeth in patients of the main group erosive ulcerative form, Lichen planus, oral mucosa corresponded to  $3.03 \pm 0.28$ ;  $3.18 \pm 0.21$ ; in the control group -  $2.14 \pm 0.38$  ( $P < 0.05$ ).



The impact of traumatic factors and the addition of secondary infection exacerbate the inflammatory process of the oral mucosa, which leads to a decrease in local factors of protection and hygiene of the oral cavity, and the exacerbation of concomitant somatic diseases leads to a recurrence of the erosive and ulcerative process.

At the same time, an increased degree of intensity of caries demonstrates the presence or absence of teeth, the absence of which disrupts the chewing process, and at least leads to partial or complete dementia, which, in turn, can lead to the development or exacerbation of diseases of the gastrointestinal tract, thereby aggravating the course of existing synechia formations of the oral mucosa.

After the rehabilitation, therapeutic and preventive measures, the indicator of caries, filling, removal after 6 months was recorded in patients in the main group ( $13.24 \pm 0.72$ ). This indicator was significantly ( $p \leq 0.05$ ) higher than in the comparison group ( $12.5 \pm 0.6$ ) and the control group ( $5.0 \pm 0.5$ ). There is still a significant difference between the indicators of caries, filling, and removal in patients of the comparison group and the control group. Thus, the picture of the intensity of caries in the long-term treatment period in all groups of examined patients underwent little change. This is due to the fact that patients were observed at the dentist for 6 months and timely measures were taken to prevent and sanitize the oral cavity.

Thus, a low level of oral hygiene and high rates of PMA and caries intensity led to a decrease in local protective mechanisms, a violation of the act of chewing, the development of inflammatory diseases of the periodontal and oral mucosa and a heavier clinical course of Erosive ulcerative form, Lichen planus, oral mucosa.

## 5. Conclusion

It should be noted that when using ozonated sesame oil in the complex treatment of patients with Erosive ulcerative form, Lichen planus, oral mucosa, there is a high anti-inflammatory effect, which consists in the regression of inflammatory phenomena and reducing the risk of possible complications.

1. In the main group of patients with Erosive ulcerative form, Lichen planus when using ozone therapy, the duration of remission increased and reached a value of  $5.75 \pm 0.06$  months in 96.87% of cases (31 people), before treatment, it was  $2.53 \pm 0.6$  months. In the comparison group, the duration of remission before treatment was  $2.49 \pm 0.7$  months, after treatment, this indicator increased to  $3.34 \pm 1.3$  months in 86.66% of cases (26 people), an increase of 1.34 times ( $p < 0.005$ ).

2. Ozone therapy provides a significant economic effect without the use of antiseptic drugs due to a significant reduction in the duration of treatment, prolongation of remission by 2.27 times ( $p < 0.005$ ).

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